time in the United States 8,592,000 illiterates and persons unable to speak English, of whom 1,006,000 live in New York State and 621,000 in Pennsylvania.

Statistics were presented to show that 62 per cent. of the miners employed in this country are of foreign birth and that thousands of them are not only unable to read safety instructions posted up in the mines, but are unable to understand directions spoken to them in English. This fact is held to be largely accountable for the great number of accidents in the mines, where an average of 3,200 men are killed every year and 300,000, or one third of all those employed, are injured.

Of those examined for military service under the selective service act it was found that more than 700,000 were physically unsound and that a large proportion of the physical defects could have been prevented or removed by proper attention in youth. The economic and industrial loss, not to speak of the poverty and misery, attributable to these facts, experts have testified, has been enormous.

The importance of the problem of Americanization, it is held, has been emphasized repeatedly during the war and is self-evident from the fact that there are now 13,000,000 foreign born in this country. Not only many of these, but many of the native born, the committee has been told, are ignorant of their duties and responsibilities as citizens.

Advocates of the bill insist that it is essential in any form of constructive legislation to meet the illiteracy peril, that provision be made for the government to assist the states in paying adequate salaries to teachers, and that more teachers, well-trained, be provided. Referring to the fact that there are 22,000,000 children of school age in the United States, a brief laid before the House Committee in behalf of the American Federation of Labor, the American Federation of Teachers and the National Education Association said:

The Bureau of Education reports that the average annual salary paid teachers in this country in 1918 was $630.64, which is $243 less per annum than the average wage paid to scrub-women in the United States navy yard. Is there any wonder that results are not always satisfactory? Inefficient schools are almost invariably the result of inadequate support. Low salaries are driving many good teachers out of the profession and filling the ranks with the immature, inexperienced and untrained.

Of the 600,000 teachers in America 100,000 are less than twenty years old; 150,000 have served two years or less; 30,000 have no education beyond the eighth grade; 200,000 have had less than a high school education. Our government has been accused of giving more thought to agriculture and commerce than to education; more attention to livestock than to children.

STORAGE RESERVOIRS IN THE ADIRONDACKS AND WATER CONSERVATION IN NEW YORK

A BULLETIN of the College of Forestry at Syracuse emphasizes the fact that the building of storage reservoirs alone will not solve the flood or water conservation problem in New York. The building of storage reservoirs must be combined with general reforestation.

The present interest in the development of water power in New York is emphasizing the problem of bringing about regular flow in streams for both power and domestic use. There is no question of course but that streams must be kept to a certain level throughout the year to be of value in the production of power. Where a stream fills its banks for a few months of the year and then dwindles to nothing, necessitating

the use of steam power for the remainder of the year, these streams can be said to be of really little value to the state. There is no question but that the building of storage reservoirs at strategic points on water courses will assist in holding water back and allowing the streams to fill to a higher level through a longer period of the year, but the building of these reservoirs is only solving half the problem. If the forests are stripped off, allowing melting snow and rain to rush rapidly to the streams, this flood water will carry soil that will fill the reservoirs as rapidly as they are cleaned out. That this is the result of building reservoirs without proper reforestation of the headwaters of the stream has been evidenced repeatedly in the Alps in France and Italy and in our own western mountains in California.

Forests have a marked influence in conserving the water which falls in the form of rain and snow. The branches of the trees break the force of the rain, letting it fall to the ground and pass into the soil easily. The cover formed by decaying leaves and sticks is a sponge-like mass called duff or humus, and this has a great water absorbing capacity. It takes up in proportion to its volume a vast quantity of water and gives it off slowly over a period of several months, thus maintaining springs and even flow in the streams.

General uniformity of stream flow in every section of the country will probably be brought about only as the result of widespread and intelligent reforestation combined with a limited number of large storage reservoirs at the headwaters of streams. If in connection with the reforestation of the barren areas, storage reservoirs are constructed so that the flood waters of spring may be impounded and given off gradually during the dryer seasons of the year, the combination of the two—the forest and the storage reservoirs—will come as near solving the problem of uniform flow in our streams as anything that can be contrived by man. Proper control of runoff is the only thing that will maintain a supply of water in streams upon which manufacturing industries are dependent and insure proper levels for navigation.

While forests act as protectors of the soil and conservers of water, they will be producing a crop of wood that will give increasingly large returns. There are, therefore, both direct and indirect benefits to be obtained from the reforestation of the nonagricultural hillsides and ridges which form so considerable a part of the great state of New York. There should be, therefore, constant cooperation between those who wish to develop the waterpower of the state or cities using water from our forests with the agencies carrying on reforestation. Without proper forest cover there can not be proper water supply.

SCIENTIFIC ITEMS

WE record with regret the death of Dr. Brown Ayres, president of the University of Tennessee and previously professor of physics at Tulane University; of Rolla C. Carpenter, professor of experimental engineering at Cornell University; of William Erskine Kellicott, professor of biology at the College of the City of New York, and of Profesor R. Nietzki, professor of chemistry at Bâle.

THE gold medal of the National Institute of Social Sciences has been awarded to Dr. Wm. H. Welch, of the Johns Hopkins Medical School. —Dr. J. A. L. Waddell, whose recent articles on engineering fifty years hence will be remembered by readers of this journal, has been elected a corresponding member of the Paris Academy of Sciences.